

Title: One-Step Equations

Brief Overview:

This unit is designed as an introduction to one-step equations. In the first lesson, students will be working strictly with models and word sentences. The goal on the first day is to introduce/reinforce important vocabulary pertaining to solving equations, as well as to write and construct equations from given word sentences and models. The second day shifts the focus from writing equations to solving equations. Students will discover and learn how to isolate the variable when solving a one-step equation. On the third day, students will practice and be assessed on their working knowledge of solving one-step equations through the ‘isolating the variable’ method. This unit is also designed to promote strong interpersonal skills, as many of the activities require cooperative learning and idea sharing between students.

NCTM Content Standards/National Science Education Standard:

- Numbers and Operations Standard for Grades 6-8
 - Instructional programs from prekindergarten through grade 12 should enable all students to-
 - understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.
- Algebra Standard for Grades 6-8
 - Instructional programs from prekindergarten through grade 12 should enable all students to-
 - represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules
 - develop an initial conceptual understanding of different uses of variables
 - use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships
 - recognize and generate equivalent forms for simple algebraic expressions and solve linear equations
 - model and solve contextualized problems using various representations, such as graphs, tables, and equations.
- Problem Solving Standard for Grades 6-8
 - Instructional programs from prekindergarten through grade 12 should enable all students to-
 - build new mathematical knowledge through problem solving
 - apply and adapt a variety of appropriate strategies to solve problems
- Reasoning and Proof Standard for Grades 6-8
 - Instructional programs from prekindergarten through grade 12 should enable all students to-
 - make and investigate mathematical conjectures
- Communication Standard for Grades 6-8

- Instructional programs from prekindergarten through grade 12 should enable all students to-
 - organize and consolidate their mathematical thinking through communication
 - communicate their mathematical thinking coherently and clearly to peers, teachers, and others
 - use the language of mathematics to express mathematical ideas precisely

Grade/Level:

- Grades 6 - 7

Duration:

- Three 50-minute class periods

Student Outcomes:

Students will be able to:

- Use models in order to represent one-step equations.
- Use models in order to write one-step equations.
- Use word problems in order to write one-step equations.
- Isolate a variable using inverse operation in order to solve a one-step equation.
- Evaluate their work in order to check their answers to one-step equations.

Materials and Resources:

- Pan balance
- Plastic sandwich bags
- Colored cubes (beans, counters, etc. could also be used)
- White chart paper (two pieces)
- Ready, Set, Hop! by Stuart Murphy
- Red (or colored) pens
- Overhead w/markers
- Internet access for the following websites:
 - <http://www.shodor.org/interactivate/activities/AlgebraFour/>
 - http://www.math123xyz.com/Nav/Algebra/One_Step_Add-Subtract.php
 - http://www.sheppardsoftware.com/mathgames/Numberballs_algebra_I/numberballsAlgebraI.htm
- Copies of worksheets/transparencies:
 - “What’s Your Strategy?”
 - “Balancing Worksheet”
 - “Writing the Equation”
 - “Try It”
 - “Solving One-Step Equations”
 - “Boss/Secretary”
 - “One-Step Equations Homework”
 - “How Well Can You Solve One-Step Equations”
 - “Are You a Master at Solving One-Step Equations” Quiz

Development/Procedures:

Day 1

Teacher Preparation:

The following materials will be needed for Day 1 Activities:

- Pan balance
- Plastic sandwich bags
- Colored cubes (beans, counters, etc. could also be used)
- White chart paper (two pieces)
- “What’s Your Strategy?”
- “Balancing Worksheet”
- “Balancing Worksheet” Transparency
- “Writing the Equation”
- “Ready, Set, Hop!” by Stuart Murphy

Students will be placed in base groups of four. For each group, have five plastic bags (sandwich size) labeled and filled with the given amounts of colored cubes. Do not place bags on students’ desks before the lesson begins!

- Bag 1: Label- ‘X’, 35 Colored Cubes
- Bag 2: Label- ‘Y’, 20 Colored Cubes
- Bag 3: Label- ‘Z’, 29 Colored Cubes
- Bag 4: Label- ‘A’, 12 Colored Cubes
- Bag 5: Label- ‘A’, 12 Colored Cubes

Having the two pieces of white chart paper posted on the chalkboard/wall prior to the lesson is recommended.

○ Pre-Assessment:

Divide the class into groups of four students. Distribute a pan balance to each group, approximately fifty color cube blocks, and the first bag of colored cubes labeled ‘X’. Instruct students not to touch or open the bag of cubes.

Hand out the “What’s Your Strategy?” worksheet to each group. Ask students to work together as a group to come up with a solution to the given problem. Have one student act as a group recorder and write down the group’s strategy and solution. Give students approximately five minutes to complete this pre assessment activity.

Come together as a whole group. Label the top of a large piece of chart paper, “Problem Solving Strategies”. Ask the students to share their strategies used when solving the pre assessment problem. Record the responses on the chart paper.

○ Exploration:

Hand out “Balancing Worksheet” to each group. Discuss the first problem as a whole group. Have students draw, using the pan-balance picture given, a model for the problem.

Discuss some problem solving strategies for determining the number of cubes in Bag ‘Y’ and add these strategies to the chart paper from the pre assessment activity.

Model to students how to solve the first problem using the picture model. Have the students ‘balance’ their pan-balance by removing seven of the colored cubes from each side of the balance by physically removing seven cubes from each side.

Have the students write the answer to how many cubes are in Bag ‘Y’ on the line that says ‘Final Equation’.

Instruct students to complete the remaining two problems as a group.

Invite students to explain and discuss strategies and solutions for the remaining problems. Write any new problem solving strategies on your chart paper.

- Explanation:

Introduce the students to the mathematical vocabulary that parallels the models that they have been using to solve equations. Write ‘Vocabulary’ at the top of the second piece of large chart paper.

Point to the Bags ‘Y’, ‘X’, ‘Z’, and ‘A’ on the “Balancing Worksheet” transparency and identify these as unknown quantities. Introduce the word ‘variable’. Generate a class definition for the word and ask the students to record the word and definition on the vocabulary chart paper.

- Variable: A symbol that stands for a value that may vary (an unknown).

Refer back to the “Balancing Worksheet” transparency. Circle each side of the equation and have the students discuss similarities between the two sides. Ask, “What do the three problems all have in common?” Guide the students in noticing that both sides of the equation are equal to one another. Introduce the term, ‘equation’, and write the word on the vocabulary chart paper. Generate a class definition for the word and ask a student to record the definition on the vocabulary chart paper.

- Equation: A mathematical statement that two expressions are equal.

Have students look back to their “Balancing Worksheet” and the line that asks for the ‘Original Equation’. Tell the students that equations can be in many different forms, the simplest being the ones they wrote for the ‘Final Equation’. Inform the students that as long as both sides of an equation are equal, or balanced, then the equation is true.

Recreate the first equation using the pan balances. Ask, “What did you start with on each side?” (Bag ‘Y’ and seven cubes, twenty-seven cubes). Ask the students if, when looking at their pan balance, each side was balanced (yes). Refer back to the class written definition of ‘equation’ and point out to the students that when they first balanced their pan-balance, they had made an equation. Model the first equation algebraically.

Have the students as a group work on writing the original equation for the remaining two problems. Come together as a group and check answers.

- Application:
Hand out “Write the Equation” worksheet to each group. Have the students work as a group to write the equations. Allow the students to check their responses with a nearby group before having the whole class share answers as a whole group.
- Differentiation:
 - Reteach: Read the story, Ready, Set, Hop!: Building Equations, by Stuart Murphy, a story based around two frogs who challenge each other to a race.
 - Enrich: Give the students a one-step equation, and have students write a creative word problem that the equation models.

Ex: $x + 3 = 7$

Word Problem: Jamie’s cat had three kittens. Jamie now has seven cats. How many cats did Jamie have before her cat had kittens?
- Assessment:
Use informal assessments based on classroom observation and student discussion to determine student ability and understanding. If time, use the enrichment activity as an exit ticket for a formative assessment.

Day 2

Teacher Preparation:

The following materials will be needed for Day 2 Activities:

- “Try It”
- Pan-balance
- Sandwich bags with colored cubes:
 - 1. Label ‘X’, 22 colored cubes
 - 2. Label ‘Y’, 16 colored cubes
- Colored cubes (approximately 30 for each group)
- “Solving One-Step Equations”
- “Solving One-Step Equations” transparency
- Chart paper (same sheets used in Day 1)
- “Boss/Secretary” response sheet and transparency
- Red pens (one for each pair of students)
- “One-Step Equations Homework”

Students will be working in their same base group of the Day 1 lesson for the Day 2 warm-up and exploration. For the remaining components of the Day 2 lesson students will be working with a partner.

- Pre assessment:

Return the students to their original groups from day 1. Distribute copies of the “Try It” worksheet to each group of students. Have the students complete the first three problems as a group. Invite various groups to the board to share their answers and their thinking with the class. Focus on how the students model the equations in numbers four and five.

- Exploration:
Give a pan-balance, Bag ‘X’, Bag ‘Y’, and colored cubes to the student groups.

Have the students use their manipulatives to try and determine a realistic model and answer for exercises four and five from “Try It”.

- Explanation:
Give each student a copy of “Solving One-Step Equations”.

Explain to the students that they are now going to shift from models to developing a set of rules for solving all equations algebraically. Use the exercises from “Try It” to support the need for algebraic methods to solve equations.

Model the algebra steps for the four problems. Make connections to the “Balancing Worksheet”, as problems one through three are equations from this worksheet. Ask, “How were you able to solve #1 using the cubes and the balance?” What operation means the same as “take away?” Ask these same questions for number two. Follow up with, “What similarities do you notice about how these two problems are solved?” Point out to students that when there was addition involved in the original equation, subtraction was used to solve for the variable. Model the algebraic manipulation on the “Solving One-Step Equations” worksheet with the students.

-Ask, “How were you able to solve the third problem using the balance and the cubes?” What operation was used (division)? Point out to students that when there was multiplication involved in the original equation, division was used to solve for the variable. Model the algebraic manipulation on the “Solving One-Step Equations” worksheet with the students.

-Tell students that addition and subtraction, as well as multiplication and division, are called inverse operations. Develop a class definition for ‘inverse’ to add to the ‘Vocabulary’ chart paper that was started in the day 1.

- Inverse: Indicates the opposite of something.

Tell students that this method for solving equations is called “isolating the variable”. Ask students what the word “isolate” means. Use the kinesthetic activity of having the entire class move to one side of the room, while only one student remains on the other to demonstrate this vocabulary term. Add this term and definition to the ‘Vocabulary’ chart paper, and add ‘isolate the variable’ to the ‘Problem Solving Strategies’ chart paper.

- Isolate: Place or set apart.

Have the students examine the fourth problem on solving one-step equations. Allow the students to apply the rules they have just learned to solve for the variable, g . Invite a student to the board to demonstrate the steps and the solution. Ask the other students for corrections or agreement, whichever is necessary.

Divide the class into pairs, and have the students complete the remaining exercises on the worksheet. Review the answers as a class.

○ Application:

Return the students to their pairs, and have the students take out one sheet of paper per pair. Have the students fold the paper vertically to form two columns, and place each person's name at the top of each column. Appoint one student to be the 'boss' and the other student to be the 'secretary'. Provide a red pen to each 'boss'.

Project a transparency of 'Boss/Secretary'. Explain the following rules to the students:

- The person who has the red pen is the boss and is responsible for writing down the problem in their column of the paper.
- The boss directs the secretary, giving directions on how to solve the problem.
- The secretary solves the problem with their pencil in the boss's column of the paper.
- The boss makes sure the secretary follows all of his instructions.
- The secretary must follow all the directions given by the boss, but may offer suggestions and/or hints towards solving the problem. Ultimately, the boss gets the final "say".
- Once the equation is solved, the boss must sign his name below the secretary's work saying that the boss has "approved" the answer and work.
- The boss and secretary will switch roles, and complete the next problem.
- This routine is continued until all problems are solved.

○ Differentiation:

- Reteach: Create a foldable that reviews the steps and vocabulary for solving one-step equations.
- Enrich: Have the students play "Algebra Four" on the internet (<http://www.shodor.org/interactivate/activities/AlgebraFour/>) in pairs. Have the students set the difficulty level to "whole numbers" and the problem type to "one-step problems".

○ Assessment:

Assign the homework "One-Step Equations Homework" which will be used to assess students' understanding and ability to solve one-step equations independently.

Day 3

Teacher Preparation:

The following materials will be needed for Day 3 Activities:

- “How Well Can You Solve One-Step Equations”
- “Are You a Master at Solving One-Step Equations” quiz
- Red pens
- Chart paper (“Problem Solving Strategies”)
- Overhead

○ Pre-assessment:

Have the students solve the equations from the “How Well Can You Solve One-Step Equations” worksheet individually.

○ Exploration:

Ensure that the students have their names on their papers and then have them crumple up their paper into a ball.

Tell the students that they will be playing the paper-toss game. Divide the class into two halves, with one half standing on one side of the room and the second half on the other. Explain to the students that at a given signal the students will have a paper-ball “fight” by throwing their crumpled papers back and forth. Tell the students that the longer they are quiet, the longer the “fight” can go on. Instruct the students that when the lights in the room are flickered off, the tossing ends.

Begin the “fight” then flicker the lights and have the students pick up the nearest paper ball to them and return to their desk.

Have the students open up their paper balls and straighten them out. Be sure the students have a different paper than their own, and to switch with a nearby student if they have their own paper.

Ask the students to check the work on the paper in front of them using a red pen to put a circle around the answer if it is correct and to correct the problem if it is incorrect.

Continue with the paper ball fight until all problems have been corrected. Encourage the students to reflect on their methods they are utilizing to check their peers’ work.

○ Explanation:

Return the students to their seats and discuss some of the strategies for checking work (working backwards, substituting the final answer back into the original problem). Copy down these strategies on the “Problem-Solving Strategies” chart paper.

Have the students pass papers back to their original owners in order for the students to review their work, noting the mistakes they made. Modeling at the board any problems that may need to be seen, if necessary.

○ Application:

Give the “Are You a Master at Solving One-Step Equations” quiz for students to complete individually.

- Differentiation:
 - Reteach: Allow students to interactively practice solving equations by allowing them to work with the applet, “One-Step Equations: Add-Subtract Multimedia Tutorial” (http://www.math123xyz.com/Nav/Algebra/One_Step_Add-Subtract.php)
 - Enrich: Allow students to play the game “Number Balls” on the internet. Students must solve one-step equation and put their solutions in order from least to greatest. (http://www.sheppardsoftware.com/mathgames/Numberballs_algebra_I/numberballsAlgebraI.htm)
- Assessment:
 - “Are You a Master at Solving One-Step Equations” quiz
 - “How Well Can You Solve One-Step Equations” worksheet

Summative Assessment:

Teachers will be informally assessing students throughout the unit, and should alter lesson plans and worksheets to fit their students’ needs. Worksheets and other in-class and homework activities can also be used to gauge student progress. The “Are You a Master at Solving One-Step Equations” quiz will serve as the cumulative assessment for the unit. Although the assessment is brief (three selected response and one constructed response question), students will also be asked to test their knowledge of one-step equations on state tests (MSA and Benchmarks), as well as use their knowledge in forthcoming lessons (two-step equations, combining like-terms, etc.).

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Day 1



Balancing Worksheet

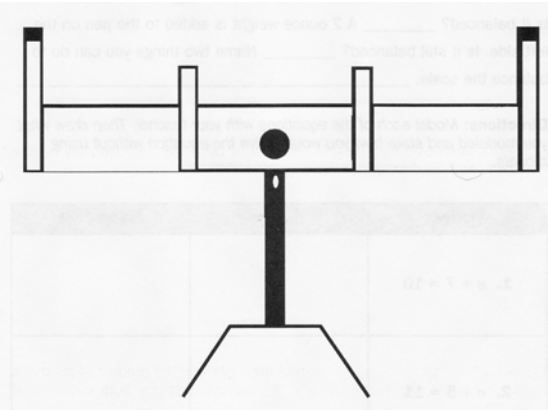


Group Members Names:

Date:

- 1) Place bag Y and seven cubes on one side of the scale then put 27 cubes on the other side of the scale. How many cubes are in bag Y?

Model:

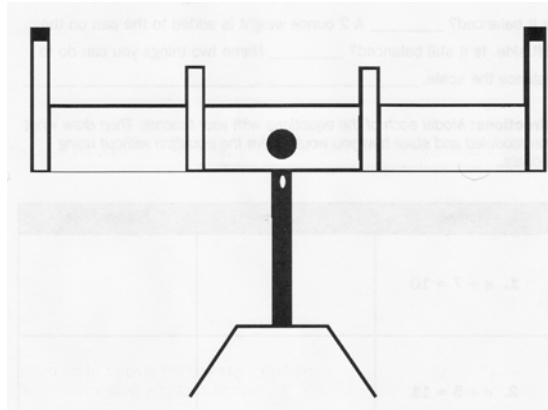


Original Equation: _____

Final Equation: _____

- 2) Place bag Z and nine cubes on one side of the scale then put 38 cubes on the other side of the scale. How many cubes are in bag Z?

Model:

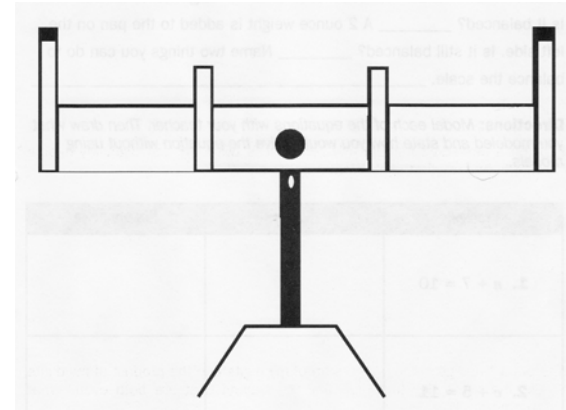


Original Equation: _____

Final Equation: _____

- 3) Place both A bags on one side of the scale and 24 cubes on the other side of the scale. How many cubes are in each A bag?

Model:



Original Equation: _____

Final Equation: _____



Balancing Worksheet – Answer Sheet



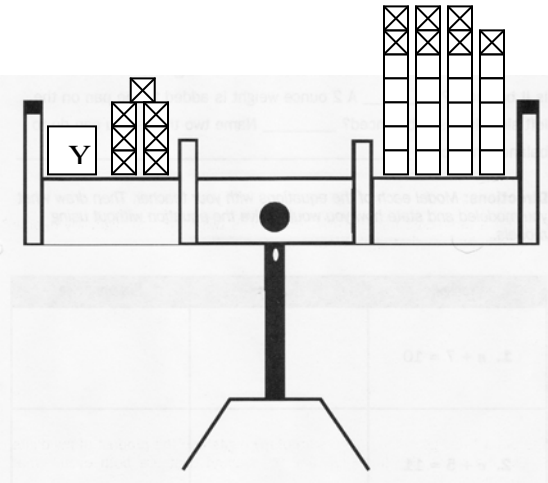
Group Members Names:

Date:



- 1) Place bag Y and seven cubes on one side of the scale then put 27 cubes on the other side of the scale. How many cubes are in bag Y?

Model:

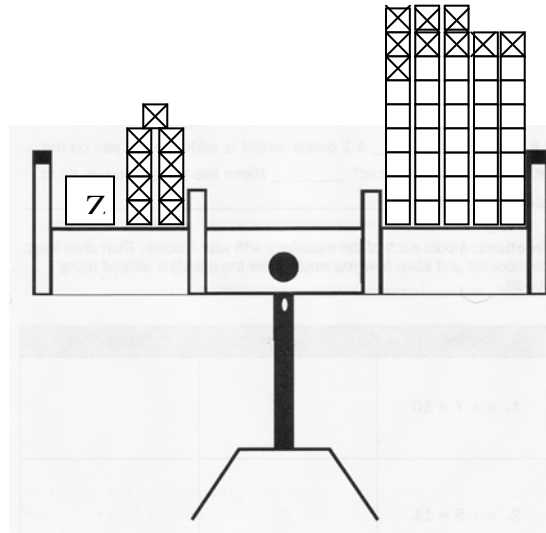


Original Equation: $Y + 7 = 27$

Final Equation: $Y = 20$

- 2) Place bag Z and nine cubes on one side of the scale then put 38 cubes on the other side of the scale. How many cubes are in bag Z?

Model:

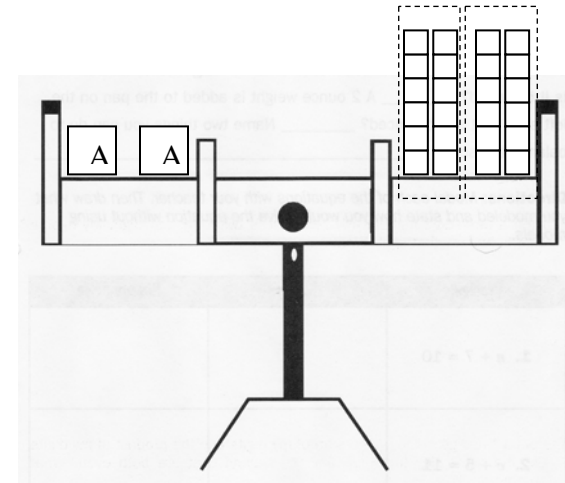


Original Equation: $Z + 9 = 38$

Final Equation: $Z = 29$

- 3) Place both A bags on one side of the scale and 24 cubes on the other side of the scale. How many cubes are in each A bag?

Model:



Original Equation: $2A = 24$

Final Equation: $A = 12$

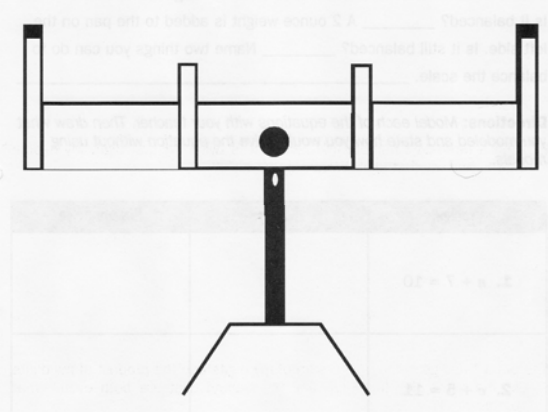
Day 1



Write the Equation

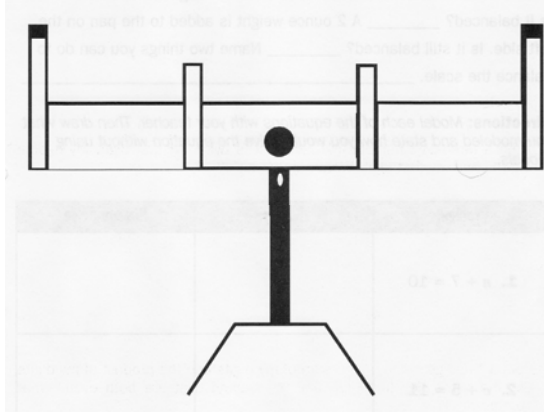
Group Members Names:

1)



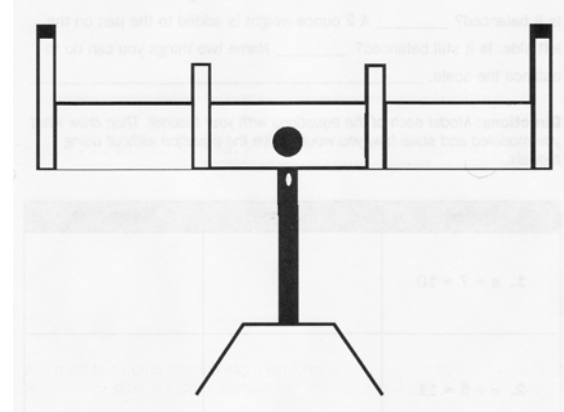
Equation: _____

2)



Equation: _____

3)



Equation: _____

- 4) The product of five and a number is equal to ten.

Equation: _____

- 5) Six plus a number is equal to 23.

Equation: _____

- 6) The sum of a number and 12 is 38.

Equation: _____

- 7) Jimmy has four dollars on Monday and he receives his allowance on Friday. He now has a total of 22 dollars. How much is Jimmy's allowance?

Equation: _____

- 8) Shykeih bought 3 movie tickets. She spent a total of \$36. How much did one movie ticket cost?

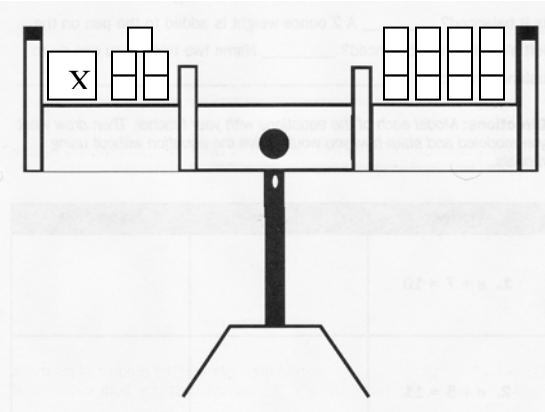
Equation: _____



Write the Equation – Answer Sheet

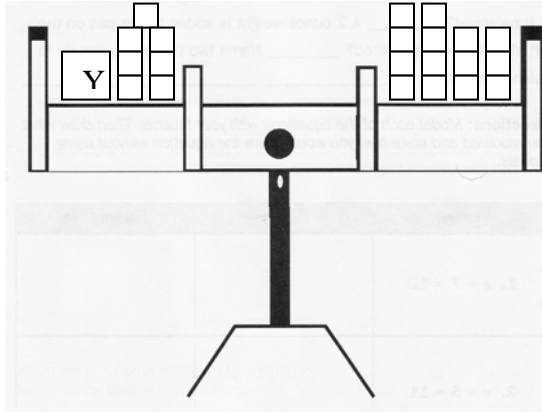
Group Members Names:

1)



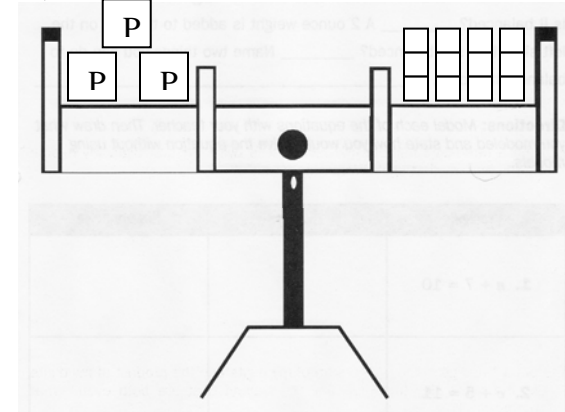
Equation: $\underline{\hspace{1cm}}X + 5 = 8$

2)



Equation: $\underline{\hspace{1cm}}Y + 7 = 14$

3)



Equation: $\underline{\hspace{1cm}}3P = 12$

- 4) The product of five and a number is equal to ten.

Equation: $\underline{\hspace{1cm}}5F = 10$

- 5) Six plus a number is equal to 23.

Equation: $\underline{\hspace{1cm}}6 + G = 23$

- 6) The sum of a number and 12 is 38.

Equation: $\underline{\hspace{1cm}}D + 12 = 38$

- 7) Jimmy has four dollars on Monday and he receives his allowance on Friday. He now has a total of 22 dollars. How much is Jimmy's allowance?

Equation: $\underline{\hspace{1cm}}\$4 + A = \$22$

- 8) Shykeih bought 3 movie tickets. She spent a total of \$36. How much did one movie ticket cost?

Equation: $\underline{\hspace{1cm}}3T = \36



What's Your Strategy

Group Members Names:

Date:

I have a bag that I cannot see into. There are colored cubes inside of the bag but I do not know how many. Think of a way I could figure out how many cubes are in the bag *without* opening or taking the cubes out of the bag to count. Are there any tools/materials you could use (that you have access to in school) that could help you?

Strategy:

Answer Sheet
Day 1



What's Your Strategy

Group Members Names:

Date:

I have a bag that I cannot see into. There are colored cubes inside of the bag but I do not know how many. Think of a way I could figure out how many cubes are in the bag *without* opening or taking the cubes out of the bag to count. Are there any tools/materials you could use (that you have access to in school) that could help you?

Strategy:

Answers will vary.

Day 2



Try It!



Name: _____

- 1) Sixteen is the product of four and a number.

Equation: _____

- 2) Seven less than a number is twenty-five.

Equation: _____

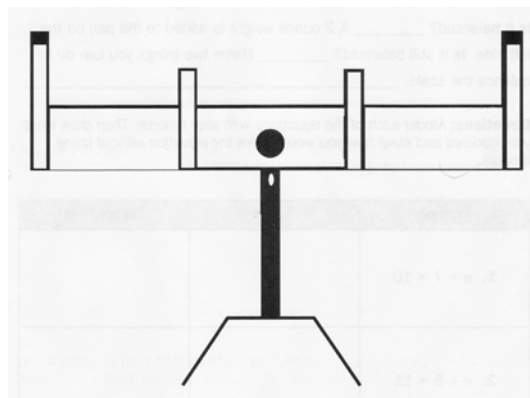
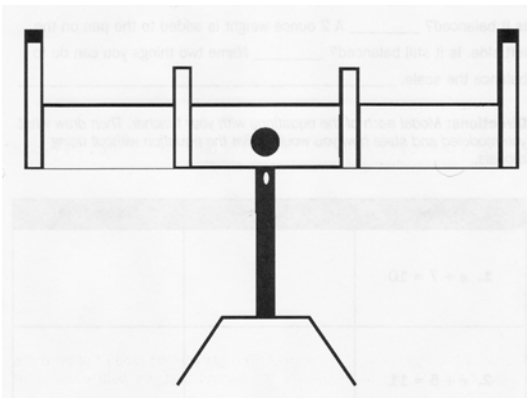
- 3) Four times a number is equal to twenty-four.

Equation: _____

Try to model the following problems:

4) $X - 5 = 17$

5) $\frac{Y}{2} = 8$



Were you able to model number 4 and 5? _____

Answer Sheet
Day 2



Try It!

Name:

- 1) Sixteen is the product of four and a number.

Equation: $16 = 4X$

- 2) Seven less than a number is twenty-five.

Equation: $Y - 7 = 25$

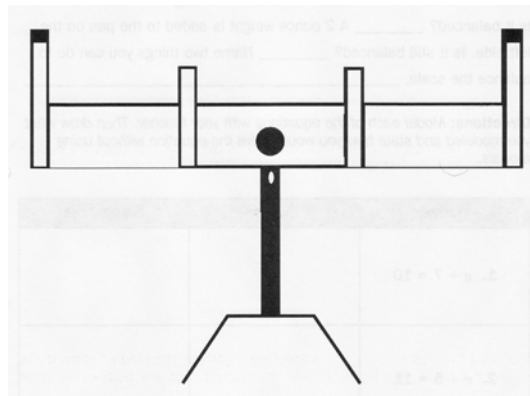
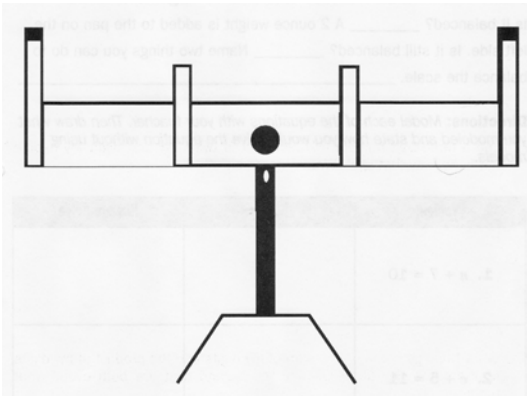
- 3) Four times a number is equal to twenty-four.

Equation: $4Q = 24$

Try to model the following problems:

4) $X - 5 = 17$

5) $\frac{Y}{2} = 8$



Were you able to model number 4 and 5? **NO**



Solving One – Step Equations

Name:

Work along with your teacher to solve the first four equations. Then solve the rest with your partner. (Circle your answer)

1) $Y + 7 = 27$

2) $Z + 9 = 38$

3) $2A = 24$

4) $G - 11 = 32$

5) $H + 13 = 26$

6) $7D = 42$

7) $L - 17 = 43$

8) $\frac{X}{8} = 3$

Answer Sheet
Day 2



Solving One – Step Equations

Name:

Work along with your teacher to solve the first four equations. Then solve the rest with your partner. (Circle your answer)

1)
$$\begin{array}{r} Y + 7 = 27 \\ - 7 \quad -7 \\ \hline Y = 20 \end{array}$$

2)
$$\begin{array}{r} Z + 9 = 38 \\ - 9 \quad -9 \\ \hline Z = 29 \end{array}$$

3)
$$\begin{array}{r} \frac{2A}{2} = \frac{24}{2} \\ \hline A = 12 \end{array}$$

4)
$$\begin{array}{r} G - 11 = 32 \\ + 11 \quad +11 \\ \hline G = 43 \end{array}$$

5)
$$\begin{array}{r} H + 13 = 26 \\ - 13 \quad -13 \\ \hline H = 13 \end{array}$$

6)
$$\begin{array}{r} \frac{7D}{7} = \frac{42}{7} \\ \hline D = 6 \end{array}$$

7)
$$\begin{array}{r} L - 17 = 43 \\ + 17 \quad +17 \\ \hline L = 60 \end{array}$$

8)
$$8 * \frac{X}{8} = 3 * 8$$

$$X = 24$$



Boss/Secretary



1) $T + 4 = 27$

2) $E + 12 = 54$

3) $9R = 63$

4) $84 = 6L$

5) $P - 23 = 85$

6) $\frac{X}{12} = 12$

Answer Sheet
Day 2



Boss/Secretary



$$\begin{array}{r} 1) \quad T + 4 = 27 \\ \quad \underline{-4 \quad -4} \end{array}$$

$$T = 23$$

$$\begin{array}{r} 2) \quad E + 12 = 54 \\ \quad \underline{-12 \quad -12} \end{array}$$

$$E = 42$$

$$3) \quad \frac{9R}{9} = \frac{63}{9}$$

$$R = 7$$

$$4) \quad \frac{84}{6} = \frac{6L}{6}$$

$$L = 14$$

$$\begin{array}{r} 5) \quad P - 23 = 85 \\ \quad \underline{+23 \quad +23} \end{array}$$

$$P = 108$$

$$6) \quad 12 * \frac{X}{12} = 12 * 12$$

$$X = 144$$

Day 2

Name:

Homework
One-Step Equations

Solve the following equations. Good Luck!

1) $U + 16 = 72$

2) $8R = 72$

3) $\frac{P}{8} = 6$

4) $N - 14 = 73$

5) $7W = 56$

Remember to check over your work.

Hooray you have finished your homework!!!



Answer Sheet

Day 2

Name:

Homework One-Step Equations

Solve the following equations. Good Luck!

$$\begin{array}{r} 1) \quad U + 16 = 72 \\ \quad - 16 \quad - 16 \\ \hline \end{array}$$

$$U = 56$$

$$\begin{array}{r} 2) \quad \frac{8R}{8} = \frac{72}{8} \\ \hline \end{array}$$

$$R = 9$$

$$\begin{array}{r} 3) \quad 8 * \frac{P}{8} = 6 * 8 \\ \hline \end{array}$$

$$P = 48$$

$$\begin{array}{r} 4) \quad N - 14 = 73 \\ \quad + 14 \quad + 14 \\ \hline \end{array}$$

$$N = 87$$

$$\begin{array}{r} 5) \quad \frac{7W}{7} = \frac{56}{7} \\ \hline \end{array}$$

$$W = 8$$

Remember to check over your work.

Hooray you have finished your homework!!!



Day 3
How Well Can You Solve One-Step Equations?

Name:

Solve each equation. (Circle your answer)

1) $Y + 3 = 52$

2) $C - 12 = 36$

3) $P - 21 = 32$

4) $5W = 60$

5) $\frac{T}{7} = 11$

6) $R + 17 = 92$

7) $3X = 45$

8) $A - 78 = 123$

Answer Sheet
Day 3
How Well Can You Solve One-Step Equations?

Name:

Solve each equation. (Circle your answer)

1)
$$\begin{array}{r} Y + 3 = 52 \\ -3 \quad -3 \\ \hline \end{array}$$

$$Y = 49$$

2)
$$\begin{array}{r} C - 12 = 36 \\ + 12 \quad +12 \\ \hline \end{array}$$

$$C = 48$$

3)
$$\begin{array}{r} P - 21 = 32 \\ + 21 \quad +21 \\ \hline \end{array}$$

$$P = 53$$

4)
$$\begin{array}{r} 5W = 60 \\ 5 \quad 5 \\ \hline \end{array}$$

$$W = 12$$

5)
$$7 * \frac{T}{7} = 11 * 7$$

$$T = 77$$

6)
$$\begin{array}{r} R + 17 = 92 \\ - 17 \quad -17 \\ \hline \end{array}$$

$$R = 75$$

7)
$$\begin{array}{r} 3X = 45 \\ 3 \quad 3 \\ \hline \end{array}$$

$$X = 15$$

8)
$$\begin{array}{r} A - 78 = 123 \\ +78 \quad +78 \\ \hline \end{array}$$

$$A = 201$$

Name:

Are You a Master at Solving One- Step Equations?

1) $R + 78 = 135$

- a) $R = 135$
- b) $R = 78$
- c) $R = 57$
- d) $R = 53$

2) $X - 35 = 89$

- a) $X = 124$
- b) $X = 142$
- c) $X = 112$
- d) $X = 125$

3) $\frac{V}{3} = 12$

- a) $V = 17$
- b) $V = 36$
- c) $V = 39$
- d) $V = 4$

- 4) Barry went to the ice cream shop on Saturday. He bought himself and 3 friends ice cream cones. Barry spent a total of \$36.

Part A : Write an equation using a variable for the above problem.

Part B:

- How much did each ice cream cone cost?
- Use what you know about solving one – step equations in order to explain how you determined your answer.

Answer Sheet
Day 3

Name:

Are You a Master at Solving One- Step Equations?

1) $R + 78 = 135$

- a. $R = 135$
- b. $R = 78$
- c. $R = 57$**
- d. $R = 53$

2) $X - 35 = 89$

- a. $X = 124$**
- b. $X = 142$
- c. $X = 112$
- d. $X = 125$

3) $\frac{V}{3} = 12$

- a. $V = 17$
- b. $V = 36$**
- c. $V = 39$
- d. $V = 4$

Answer Sheet
Are You a Master at Solving One- Step Equations?

Page 2

- 4) Barry went to the ice cream shop on Saturday. He bought himself and 3 friends ice cream cones. Barry spent a total of \$36.

Part A : Write an equation using a variable for the above problem.

$$4C = \$36$$

Part B:

- How much did each ice cream cone cost?
- Use what you know about solving one – step equations in order to explain how you determined your answer.

Each ice cream cone cost \$9.

$$\frac{4C}{4} = \frac{\$36}{4}$$

$$C = \$9$$